

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)**

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2007/075410

International filing date (day/month/year)
27.12.2007

Priority date (day/month/year)
28.12.2006

International Patent Classification (IPC) or both national classification and IPC
INV. G03F7/20

Applicant
NIKON CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1 (a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

Weckesser, Jens

Telephone No. +49 89 2399-2008



**WRITTEN OPINION OF THE
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International application No.
PCT/JP2007/075410

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material:

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material:

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing:

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2007/075410

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-26,28-33</u>
	No: Claims	<u>27</u>
Inventive step (IS)	Yes: Claims	<u>1-26,28-33</u>
	No: Claims	<u>27</u>
Industrial applicability (IA)	Yes: Claims	<u>1-33</u>
	No: Claims	<u>-</u>

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2007/075410

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents D1 - D2, cited in the International Search Report:

D1: EP 1 717 845 A1 (cited by Applicant)

D2: US 2004 / 0 211 920 A1 (cited by Applicant)

2. The present application does not meet the criteria of Article 33 (1) PCT, because the subject matter of **claim 27** is not new in the sense of Article 33 (2) PCT.

- 2.1 Document D1 discloses all the features of **claim 27**:

An exposing method for exposing a substrate with an exposure beam, the method comprising:

*holding a substrate to a first movable member (figure 1; substrate stage PST2);
acquiring positional information about the substrate, which is held by the first movable member, in a state in which a first liquid is held between the substrate held by the first movable member and a first optical member (par. 0062);*

exposing the substrate held by the first movable member through a second optical member and a second liquid after the acquisition of the positional information about the substrate held by the first movable member (par. 0091);

*holding a substrate to a second movable member (par. 0079; substrate stage PST1);
acquiring positional information about the substrate, which is held by the second movable member, in a state in which the first liquid is held between the substrate held by the second movable member and the first optical member (par. 0079 and par. 0062); and*

exposing the substrate held by the second movable member through the second optical member and the second liquid after the exposure of the substrate held by the first movable member and before after (cf. item VIII, 2.) the acquisition of the positional information about the substrate held by the second movable member (par. 0091),

wherein

~~the first liquid continues to be held below the first optical member during transition from a first state in which the first liquid is held between the substrate held by the first movable member and the first optical member to a second state in which the first liquid is held between the substrate held by the second movable member and the first optical member (cf. item VIII, 2.).~~

Re Item VII

Certain defects in the international application (form or content)

1. Contrary to the requirements of Rule 6.3 (b) PCT independent claims 1, 20, 21 and 27 are not drafted in the **two-part-form**.
2. The features of the claims are not provided with **reference signs** placed in parentheses (Rule 6.2 (b) PCT).
3. Contrary to the requirements of Rule 5.1 (a)(ii) PCT, the relevant **background art** disclosed in documents D1 - D2 is not mentioned in the description.

Re Item VIII

Certain observations on the international application (clarity, conciseness)

The application does not meet the requirements of Article 6 PCT.

1. Although **claims 21 and 27** have been drafted as separate independent claims, they both relate to a method for exposing a substrate, and the set of claims therefore lacks conciseness.
The same argumentation applies *mutatis mutandis* for the device fabricating methods according to **claims 20 and 33**.
2. **Claim 27** does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved ("the first liquid continues to be held below the first optical member"), which merely amounts to a statement of the underlying problem, without providing the technical features ("liquid holding member";

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International application No.

PCT/JP2007/075410

cf. claim 28) necessary for achieving this result.

Furthermore the **claim 27** exposing the substrate held by the second movable member before (after?) acquiring positional information about said substrate is in contradiction to page 63, lines 22 - 25.

3. Method features like "that exposes" are used to define apparatus **claim 1**, which may be reformulated "adapted to expose". Note that only an apparatus in operation falls under **claim 1** in its present form.

The same argumentation holds *mutatis mutandis* for **claims 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 16, 17, 18, 19**.